Generalized symmetry of graphs - a survey

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Abstract

Symmetry of graphs has been extensively studied over the past fifty years by using automorphisms of graphs and group theory which have played and play an important role for graph theory, and promising and interesting results have been obtained. We introduced generalized symmetry of graphs and investigated it by using endomorphisms of graphs and semigroup theory. In this paper, we will survey some results we have achieved in recent years. The paper consists of the following sections.

1. Introduction
2. End-regular graphs
3. End-transitive graphs
4. Unretractive graphs
5. Graphs and their endomorphism monoids
6. Cayley graphs of semigroups.

Key words: Graph, endomorphism, monoid, generalized symmetry, End-regular, End-transitive, Unretractive, Cayley graph.

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